

Weather and Climate Newsletter June 4, 2008

DROUGHT

Newsletters available online soon!

Today, an Executive Order was put out by Governor Schwarzenegger, declaring the current water crisis in California what it is: A DROUGHT.

<http://gov.ca.gov/>

We are in the 2nd year of very low river runoff across the state. Northern California has just experienced its driest spring on record. And most of our major reservoirs are holding 50-60% of their water capacity. The state is faced with a water shortage at a time when legal and ecological restrictions have made it more difficult to move water around the system. We have tapped our reserves from two years' ago, the last wet year in California. So, conservation and hard decisions follow.

Here are more details on where things stand. DWR's Northern Sierra 8-station has had it's 9th driest 2 year period. Those stations have received 34.8" for the water year so far, since October 1, 2007. That geographic area represents the inflow to major reservoirs. That precip total is 73% of normal for this time of year, just slightly less than the 75% of normal that was recorded on this date last year. Individually, the current 2008 water year ranks as the 22nd driest year in the 88 year period of record. It's the two year total that tells the story.

Sacramento, Stockton, Modesto, Red Bluff, San Francisco, and Bakersfield have all recorded their driest spring (March, April, May) on record. Here are the very low 3-month totals from the National Weather Service:

Sacramento	0.17"
Stockton	0.08"
Modesto	0.10"
Red Bluff	0.44"
San Francisco	0.47"
Bakersfield	0.08"

These are about 20% of normal. Bear in mind that last year, southern California had about 20% of normal rainfall the entire season! This year, however, local rainfall for the south state stands at about 70-80% of normal. Total California statewide precipitation for spring, 2008 is 1.21", or 22% of the 1895-2007 average, the driest in 114 years of record in the state of California.

<http://www.wrcc.dri.edu/>

The Sacramento and San Joaquin rivers are both forecast at critical levels in terms of year total streamflow, and are projected to fall close to the lowest 10% of historical record. There are 5 classifications for the Sac and SJQ runoff "water year index". They are mathematically weighted calculations based on three elements: April-July runoff forecast, previous year's index, and early season (Oct-March) runoff. Each river system has it's own weighting formula, which you can find more about on our website (link below). The April-

Weather and Climate Newsletter June 4, 2008

July runoff forecast itself is based on five weighted factors, including last year's runoff, early season runoff, early season rainfall, snowpack April 1 status, late season rainfall. These are calculated several times through winter/spring. The May 1 declaration is used for the rest of the season as the "water year type". On October 1, the final measures are in, and from time to time, the standing record does have to be adjusted to account for observed measures after May 1.

Categories:

Wet

Above Normal

Below Normal

Dry

Critical

<http://cdec.water.ca.gov/cgi-progs/iodir/WSI>

BOTH the Sac and the San Joaquin are classified as CRITICAL for 2008. Last year Sac ended Dry, San Joaquin ended Critical. That's two bad years.

The last big drought period in the state occurred between 1987 and 1992. The river runoff classifications started the same way. First year Dry for the Sac, Critical for the San Joaquin. Second year, both Critical. So, we shall see if this is a similar trend. Since the Gold Rush days, no drought in California has lasted longer than 6 years.

The snowpack is virtually gone, of course. Although January and February were great snow producers, two months aren't enough for a whole season. The March 1 shutdown of Pacific moisture left us without the necessary additions that we like to have in spring. It was dry and sunny, and the dry ground (from the year prior and a dry fall) absorbed a lot of that snowmelt. Today, what's up there amounts to about 20% of normal for this time of year.

Project water deliveries are down, due to dry conditions and Wanger court restrictions (Delta smelt). The State Water Project allocations are 35% of requested deliveries to contractors. And the Central Valley Project (federal) allocations are 40% of requests for agriculture, 75% for municipalities.

Reservoir status; approximate holding capacity and % of capacity held currently:

+Trinity	2.5 MAF	68%
+Shasta	4.5 MAF	61%
*Oroville	3.5 MAF	50%
+Folsom	1 MAF	63%
*+San Luis	2 MAF	53%

+ Fed, * State

MAF = Million Acre Feet

By October 1, the average state reservoir storage is projected to be about 65% of normal for that date. (Figures in the table above are for

Weather and Climate Newsletter June 4, 2008

% of capacity). For a nice color graphical depiction of reservoir storage for time of year, and capacity, go to:

http://watersupplyconditions.water.ca.gov/current_conditions.pdf

This is updated every couple weeks.

Summer is of course a dry time for California. As we look to next winter, we hope for wet weather. One result of climate change (global warming) is that areas around the Earth that have large scale subsidence (sinking motion), experience an intensification of that subsidence. This means that dry conditions, drought can become longer, or more intense. The southwestern United States is one of those places on the planet that has deserts, due to this general circulation pattern. If that is intensifying, or the sinking area expands even slightly northward, regions of the normally wet central and north state could experience a reduction in total precipitation. It is not possible to tell at this time whether that's the cause. California's climate record includes much drier periods than those that we (as a society) have experienced since the late 1800's. Around 900 A.D. there was a 200 year drought, and near 1350 A.D. there was a 150 year drought. During those periods runoff was 40-75% lower than it is nowadays. Climate changes, of whatever cause, can lead to great variability in California's water.

The Weather and Climate Newsletters will be available ONLINE on June 16, on the State Meteorologist page, the State Climatologist page, and on the CDEC weather tab page:

<http://www.weather.water.ca.gov/>

<http://www.climate.water.ca.gov/>

<http://cdec.water.ca.gov/weather.html>

On June 16, the Division of Flood Management website will have a new look, as well. Archived newsletters will be available, too, but not right away. Another letter will come out when these changes occur.

Reporter questions? Please call Elissa Lynn, Senior Meteorologist, (916) 574-2221.

(EL)

Weather_and_Climate_News

Modify your subscription settings at

http://listhost2.water.ca.gov/mailman/listinfo/weather_and_climate_news